1597021 COMPLETE SPECIFICATION

1 SHEET This drawing is a reproduction of the Original on a reduced scale

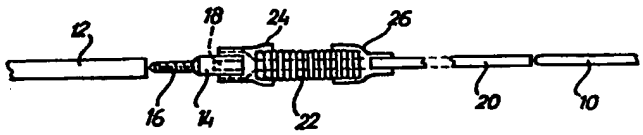

FIG. 1

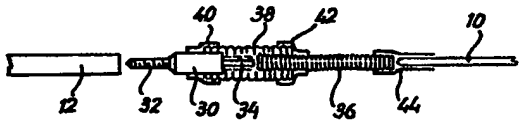

FIG. 2

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(54) IMPROVEMENTS IN AND RELATING TO FISHING DEVICES

(71) I, KENNETH MIDDLETON, a British Subject, of 62, Belmont Avenue, Breaston, Derbyshire, do hereby declare the invention,

for which I pray that a patent may be granted to me, and the method by which it is to be performed, to be particularly described in and by the following statement:—

This invention relates to devices for use in fishing and in particular to assemblies which connect tips, functioning as bite indicators, on to the end of fishing rods.

According to the present invention there is provided a tip assembly for a fishing rod, said assembly comprising a connector adapted to be mounted on the end of the fishing rod, a tension spring mounted on the connector, a tip for the rod, and means for adjustably locating the position of the tip in the assembly relative to the spring such that the tip can be adjusted to function selectively as at least a quiver tip or a spring tip.

Preferably, the spring is secured to the connector and a further tension spring of greater diameter than the first-mentioned tension spring is fitted over part of the length of the latter and fixed thereto, such that, when an end of the tip is located within said part of the length of the first-mentioned spring, the tip functions as a quiver tip, and, when the end of the tip is located within the other part of the length of the first-mentioned spring, the tip funtions as a spring tip.

The tip may be adjustably mounted within the first-mentioned spring by means of a flexible sleeve which overlies the free end of the first-mentioned spring and receives the tip in a sliding friction fit.

The further spring preferably partly overlies the connector and is secured thereto, and shrink rubber sleeves are preferably fitted over respective ends of the further spring.

Alternatively, the connector may have an aperture at its end remote from the rod and the spring is fitted over said remote end of the connector to trap an end of an elongate flexible sleeve thereon, such that, when an end of the tip is located within the spring and engages in the connector aperture, the tip functions as a quiver tip, when the end of the tip is located within the spring but not within the connector aperture, the tip functions as a spring tip, and if the end of the tip is located externally of the spring to be retained solely by the elongate sleeve, the tip functions as a swing tip.

Preferably the end of the elongate sleeve is retained on the connector by providing an interference fit between the latter and the spring, and preferably also shrink rubber sleeves overlie the ends of the spring and respectively the connector and the elongate sleeve.

The end of the tip can be adjusted to any location within its spring so as to vary the tension applied to the tip when functioning as a spring tip.

Embodiments of the present invention will now be described by way of example only with reference to the accompanying drawings wherein:—

Fig. 1 is an exploded view of the components of an assembly of the invention according to a first embodiment; and

Fig. 2 is an exploded view of the components of an assembly of the invention according to a second embodiment.

Referring to Fig. 1 an assembly for connecting a tip 10 to a fishing rod 12 comprises a connector or plug 14 having an externally threaded end 16 engageable in a corresponding threaded aperture (not shown) in the end of the rod 12 to secure the plug 14 thereto, the plug 14 having a plain aperture 18 opening on to its other end. Fitted over said other end of the plug 14 is one end of an elongate flexible sleeve 20, e.g. formed of rubber, the sleeve 20 being retained on the plug 14 by providing an interference fit between the latter and one end of a tension spring 22. Shrink rubber sleeves 24, 26 are fitted over the end of the spring 22 and respectively the plug 14 and the sleeve 20. This embodiment therefore requires no adhesive or the like to assemble the components.

One end of the tip 10 is a sliding friction fit within the sleeve 20 and can be adjustably located within the assembly such that the tip has different functions.

When the tip 10 is pushed into the

assembly such that the end of the tip engages in the aperture 18 of the plug 14, the tip will function as a quiver tip.

When the tip is pushed into the assembly to locate within the spring 22 but not the aperture 18 of the plug 14, the tip will function as a spring tip. It will be appreciated that the position of the tip 10 within the spring 22 can be varied to vary the tension applied to the tip.

If the tip is not pushed into the assembly as far as the spring 22, the tip is retained simply by its friction fit within the sleeve 20 and the tip can then function as a swing tip.

Referring to Fig. 2 an assembly by connecting the tip 10 to the rod 12 comprises a connector or plug 30 which has an externally threaded end 32 engageable within the threaded aperture in the end of the rod 12 and a plain pin 34 formed on its other end. A first tension spring 36 has one end fitted over the pin 34 and secured thereto, for example by gluing, and a second tension spring 38 of greater diameter than the spring 36 is fitted over part of the length of the latter and the plug 30 and is secured in position, for example by gluing to the plug 30. Shrink rubber sleeves 40, 42 overlie the ends of the spring 38 and respectively the plug 30 and the spring 36.

The end of the tip 10 is retained within the assembly by being a sliding friction fit within a flexible sleeve 44, for example of rubber, which is attached to the free end of the spring 36.

When the tip 10 is pushed into that part of the spring 36 which is surrounded by the spring 38, the tip functions as a quiver tip due to the effect of the combined springs.

When the tip is located within the assembly in the other part of the spring 36, the tip can function as a spring tip. The position of the tip 10 within the other part of the spring 36 is adjustable to vary the tension applied to the tip.

It will be appreciated that an assembly according to the invention enables the use of the one tip in differing fishing conditions. Previously, when an angler has required to change from a quiver tip to a spring tip, or from either to a swing tip, it has been necessary to dismantle the rod, which is obviously laborious and time consuming in view of the fact that the fishing line has to be reeled in before the tip can be changed. It is all important of course in match fishing to suit the tip to the prevailing water conditions and yet lose as little fishing time as possible. The invention therefore affords considerable saving in time and the tip can be adjusted easily and quickly. The invention also of course has economic advantages as the one tip can be used to perform various functions.

Various modifications may be made without departing from the scope of the invention as defined in the appended claims.

WHAT I CLAIM IS:—

1. A tip assembly for a fishing rod, said assembly comprising a connector adapted to be mounted on the end of the fishing rod, a tension spring mounted on the connector, a tip for the rod, and means for adjustably locating the position of the tip in the assembly relative to the spring such that the tip can be adjusted to function selectively as at least a quiver tip or a spring tip.

2. An assembly according to claim 1, wherein a further tension spring of greater diameter than the first-mentioned tension spring is fitted over part of the length of the latter and fixed thereto, such that, when an end of the tip is located within said part of the length of the first-mentioned spring, the tip functions as a quiver tip, and, when the end of the tip is located within the other part of the length of the first-mentioned spring, the tip functions as a spring tip.

3. An assembly according to claim 2, wherein the further spring partly overlies the connector and is secured thereto, and shrink rubber sleeves are fitted over respective ends of the further spring.

4. An assembly according to any of the preceding claims, wherein the tip is adjustably mounted within the first-mentioned spring by means of a flexible sleeve which overlies the free end of the first-mentioned spring and receives the tip in a sliding friction fit.

5. An assembly according to claim 1, wherein the connector has an aperture at its end remote from the rod and the spring is fitted over said remote end of the connector to trap an end of an elongate flexible sleeve thereon, such that, when an end of the tip is located within the spring and engages in the connector aperture, the tip functions as a quiver tip, when the end of the tip is located within the spring but not within the connector aperture, the tip functions as a spring tip, and if the end of the tip is located externally of the spring to be retained solely by the elongate sleeve, the tip functions as a swing tip.

6. An assembly according to claim 5, wherein the end of the elongate sleeve is retained on the connector by providing an interference fit between the latter and the spring.

7. An assembly according to claim 5 or 6, wherein shrink rubber sleeves overlie the ends of the spring and respectively the connector and the elongate sleeve.

8. An assembly according to any of the preceding claims, wherein the end of the tip is adjustable to any location within its spring so as to vary the tension applied to the tip when functioning as a spring tip.

9. A tip assembly for a fishing rod

substantially as hereinbefore described with reference to Fig. 1 or Fig. 2 of the accompanying drawings.

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